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PROJECT NO. 51840

RULEMAKING TO ESTABLISH ELECTRIC	§	PUBLIC UTILITY COMMISSION
WEATHERIZATION STANDARDS	§	
	§	OF TEXAS

THE ADVANCED POWER ALLIANCE AND AMERICAN CLEAN POWER ASSOCIATION COMMENTS

The Advanced Power Alliance and the American Clean Power Association submit the following response to the request for comments on questions and the discussion draft issued by the Public Utility Commission of Texas (Commission) in Project 51840: *Rulemaking to Establish Electric Weatherization Standards*. The comments submitted do not reflect the opinions of any individual member company.

I. EXECUTIVE SUMMARY

- Senate Bill (SB) 3 requires the Commission to create a basic weather reliability-based standard to minimize the number of outages during extreme weather events.
- The North American Electric Reliability Corporation (NERC) has nationwide authority over developing an enforcing reliability standards and their newly adopted Cold Weather Reliability Standards provide a regulatory framework for weatherization standards that will meet the objectives of SB 3.
- Weatherization standards adopted should not require generation owner/operators to exceed Original Equipment Manufacturer (OEM) design criteria.

- It is imperative that reliability standards are technologically feasible with commercially available solutions.

II. INTRODUCTION

The Advanced Power Alliance (APA) and the American Clean Power Association (ACP) serve as the voice of more than 1,000 member companies that represent a diverse cross-section of the world's leading energy companies, energy investors, energy consumers and power generation manufacturers from across the clean power sector that are driving high-tech innovation through the development of generation assets including wind, solar and energy storage spurring massive investment in the U.S. Economy while creating jobs. Projects developed by our member companies and investors generate local tax revenue and multi-generational income for Texas landowners.

III. RESPONSE TO QUESTION NUMBER 1

Question 1: What is the availability of the statistically reliable weather information from, e. g. the American Society of Heating, Refrigeration and Air Conditioning Engineers; National Weather Service; or other sources for the ERCOT power region power region? Please share the source of that information.

While many generators, including our member companies, use multiple sources of reliable climate datasets for the evaluation of weather conditions in the ERCOT Region, the

National Oceanic and Atmospheric Administration's (NOAA's) National Centers for Environmental Information (NCEI) provides the most comprehensive source of historical weather information. NCEI's Integrated Surface Database (ISD) is a global database that consists of hourly and synoptic observations compiled from numerous sources into a common ASCII format and common data model.

IV. RESPONSE TO QUESTION NUMBER 2

Question 2: Do existing market-based mechanisms provide sufficient opportunity for cost recovery to meet the weather reliability standards proposed in the discussion draft? If not, what cost recovery mechanism should be included in the proposed rule?

The Commission has not implemented market-based mechanisms to provide generator owners with cost recovery for weatherization costs. The significant capital expenses a generator owner would need to incur in order to weatherize new or existing generation equipment costs could be potentially recovered only with variable revenues from participating in ERCOT's wholesale markets for energy and ancillary services. Given the ambiguity discussed above of any "weather reliability standards" the Commission may adopt, it is unclear what if any cost-recovery mechanism would be sufficient to compensate generator owners for required weatherization.

That said, as the Commission examines options for weatherization standards it should not require generation owner/operators to exceed Original Equipment Manufacturer (OEM) design criteria.

Like all industrial machines, generation assets are designed and built to standards that allow them to operate reliably and safely under a specific range of conditions. Retrofitting generation facilities to meet standards that go beyond OEM design parameters can invalidate the manufacturer's warranty and increase the risk of catastrophic equipment failure. These adverse consequences run counter to the reliability objectives of SB 3 and for this reason, we ask the Commission to refrain from imposing a reliability standard that exceeds OEM design criteria.

While generation technologies vary by manufacturer, wind, solar and storage generation assets are designed and built to operate in a broad range of weather conditions that are predetermined by the major equipment manufacturers based on climate characteristics in key markets. Manufacturers tailor equipment to work best under certain weather conditions and owners typically procure equipment that is best suited to a specific location. Owners of these assets have limited ability to change their turbine operating capabilities once the selected equipment is installed. Turbines installed in the United States operate at a wide range of temperatures and more cost-prohibitive weatherization options are not considered unless annual icing losses are forecasted to reduce production repeatedly and continuously over a cold weather season. These conditions have not been met in the United States and therefore there is no market for these solutions driving new technologies and no need to operate outside of current OEM design parameters in Texas. Weatherization standards adopted through this proceeding should respect existing and future OEM design criteria and should not require

generation owners to operate outside the OEM design limits and thus risk catastrophic equipment failure.

Prudent weatherization standards also look at extreme weather events holistically by evaluating the effectiveness of not only technology, but also generation site accessibility and safety and grid reliability. In some cases, wind generation sites were inaccessible to service personnel due to unsafe road conditions thus preventing needed maintenance on generation assets to improve availability. In other cases, wind generation was available, but the sites lost access to the grid thus stranding needed power. In other words, effective weatherization strategies look at technology and other confounding factors that substantially contribute to the reliable delivery of power in Texas.

V. COMMENTS ON THE DISCUSSION DRAFT RELATED TO 16 ADMINISTRATIVE CODE

(TAC) § 25.55

Under the draft rule, § 25.55 (f) (1) states in part that generators must submit a study that confirms compliance with the “applicable rated capability”. Additionally, under § 25.55 (g) (1) ERCOT must inspect resources to determine compliance with the requirements for “applicable rated capability”. Further, § 25.55 (h) states that the Commission will impose an administrative penalty based upon whether the generator reasonable ensured its resource can provide service at the resource’s “applicable rated capability” at various percentiles of extreme weather scenarios. The draft rule’s use of “applicable rated capability” at various percentiles of

extreme weather scenarios is problematic as SB 3 does not require generators to achieve specific performance standards.

SB 3 requires electric generation to implement measures to prepare to provide adequate electric generation service during a weather emergency according to reliability standards adopted by the Commission. APA and ACP request that the Commission clarify that the weatherization standard requires that generators reasonably prepare to be able to perform during certain weather emergencies and not that generators must guarantee a certain energy production output level. Generation resources may be operationally available during emergency weather conditions and nonetheless incapable of generating and delivering a certain energy output level (e.g., transmission outages may prevent delivery of a generator's energy output to the system, intermittent nature of renewable resources will result in energy production according to respective fuel availabilities, and natural gas resources may have only a finite amount of backup onsite fuel while gas is undeliverable because of upstream gas infrastructure outages). The weatherization standard should more clearly require generation resources to take reasonable measures to ensure operational availability to generate, according to OEM specifications and ERCOT dispatch instructions, at the various percentiles of extreme weather scenarios.

Under § 25.55 (d) "Weather reliability standard for a resource", generators must maintain weather preparation measures that ensure its resource can provide service at the resource's "applicable rated capacity" under the 95th percentile of each extreme weather scenario specified in the weather study. One of the issues with this proposed provision is that

the deadline for completing the weather study is no later than January 1, 2022. However, Section 39 of SB 3 directs the Commission to establish its weather-emergency-preparation rule within six months of the bill's effective date of June 8, 2021, or December 8, 2021. Given that the weather study might not be completed before the deadline for the rule adoption, we may not know the value of 95th percentile of each extreme weather scenario before the completion of the rule. Additionally, without the completion of the weather study, it is impossible to know whether the 95th percentile of each of the extreme weather scenarios exceeds OEM design criteria for generators. In other words, generation operators should be afforded the opportunity to provide comments and additional considerations to the weather study's assumptions and recommendations to be used in any standard. Such a process will ensure that the characteristics of different generation technologies are accurately reflected in any future standard and that generators can meet the standard such that reliability is enhanced.

ERCOT filed comments in this project recommending "the Commission explicitly require anti-icing or de-icing measures and temperature retrofits." However, three of the major turbine original equipment manufacturers filed comments in this project stating that this technology does not exist.

In their filed comments, GE Renewables North America, LLC (GE) stated that GE "does not currently offer systems anywhere in the United States to heat turbine blades for the prevention of icing (anti-icing) or the elimination of ice buildup after it has formed (de-icing). GE also does not currently offer blade coatings that are designed to help minimize blade ice buildup under extreme weather conditions. While GE continues to study and evaluate these

technologies, none of the technology under evaluation is expected to be commercially feasible in climates similar to Texas.”

Siemens Gamesa (SGRE) stated in their filed comments that they “do not currently offer a retrofit hardware solution anywhere in the United States to heat turbine blades for the prevention of icing (anti-icing) or the elimination of ice buildup after it has formed (de-icing).” SGRE also states that they “do not currently offer blade coatings that are designed to help minimize blade ice buildup under extreme weather conditions. While SGRE continues to study and evaluate anti-icing and de-icing technologies and blade coatings, none of the technologies under evaluation are expected to be commercially feasible as retrofits for existing turbines that have been equipped consistent with climates like Texas” noting that “turbines equipped for extreme hot weather conditions utilize different materials incorporated into several major components than a turbine equipped for operations in extreme cold weather.”

In their comments, Vestas states that they “do not offer anti-icing or de-icing options to U.S. customers.” Further, Vestas notes that they “continue to evaluate new technologies for” their “customers and regions, but at this time, there are no commercially viable anti-icing or de-icing solutions for the Texas market.”

Weatherization standards adopted by the Commission should balance the objectives of SB 3 with the goal of retaining existing generation, incenting new investment and recognizing that generation owners are required to operate their assets in accordance with OEM design criteria. It is imperative that reliability standards are technologically feasible with commercially available solutions.

Many commenters in this project suggested implementing the newly adopted North American Electric Reliability Corporation (NERC) Cold Weather Standards to meet the objectives of SB 3. APA and ACP agree that adopting the NERC standards is a prudent step toward meeting the statutory requirements of SB 3. NERC has nationwide authority over reliability standards. The newly adopted NERC reliability standards require Generator Owners and Generation Operators to protect their generation units against freezing by requiring a baseline level of cold weather planning and preparation. The new standards are aimed at enhancing the reliability of the bulk electric system during cold weather events by ensuring Generator Owners, Generator Operators, Transmission Operators, Reliability Coordinators, and Balancing Authorities prepare for extreme cold weather conditions. The final step in the process of adopting these new standards is the approval of FERC, which is expected in the second half of 2021.

Extreme weather can affect both generation and demand and cause energy shortages that lead to energy emergencies. The newly approved NERC Reliability Standards promote the reliability of the bulk electric system during cold weather and maximize generating unit availability. The standards take into consideration necessary activities such as winterization of generating units, winter-specific and plant-specific operator awareness training, and a process to ensure situational awareness for the registered functions.

The new NERC Reliability Standards include *EOP-011-2: "Emergency preparedness and operations"*, which requires Generation Owners and Generation Operators to implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness for generating units must include generating unit(s) freeze protection

measures to protect units from freezing “based on geographical location and plant configuration as well as annual inspection and maintenance of generating unit(s) freeze protection measures, operational limits in cold weather, minimum design temperature, documentation that its cold weather plan was implemented and documented unit-specific training for maintenance and operating personnel. Additionally, EOP-011-2 requires Generation Owners and Generation Operators to keep data or evidence documenting its cold weather preparedness plan(s) for a specified period of time to demonstrate compliance with weatherization plans as defined in the NERC Rules of Procedure under the Compliance Monitoring and Enforcement Program.

The newly adopted NERC Reliability Standards provide a reliable regulatory framework for weatherization standards that will meet the objectives of SB 3 while still promoting flexibility of all resources in the ERCOT market to develop unit redundancy measures. Wind turbines, solar panels and storage generation assets are designed and constructed to reliably operate in a wide range of weather conditions and owners are incentivized to maximize production.

VI. CONCLUSION

The Advanced Power Alliance and American Clean Power Association appreciate the opportunity to provide comments in this project. We believe that the newly adopted NERC Reliability Standards will provide a responsible regulatory framework for weatherization of the ERCOT Grid during cold weather to maximize generating unit availability. APA and ACP member

companies have invested more than \$70 billion on generation resources in the ERCOT Market and we strongly support the Commission's weather emergency preparedness objectives and the development of standards. Operating characteristics of renewable generators vary from one manufacturer to another and from geographic region-to-region within Texas. Generation asset owners have little to no ability to change capabilities, specifications, or characteristics without voiding Original Equipment Manufacturer warranties. It is important that weatherization standards adopted do not impose an obligation to alter facilities in a manner that would void OEM warranties or force equipment to be operated under conditions that exceed design criteria or degrade unit performance. In proposing and implementing final rules in this project, the Commission should focus on ensuring that generator owners and generator operators operate each asset suitably for its environment, and the Commission should only require specific operating parameters to the extent those parameters are consistent with standard commercially available equipment. The Commission should ensure that generating equipment offer a reasonable—but not absolute—tolerance for extreme events.

As required by the text in SB 3, the Commission should adopt a rule that requires generators "to implement measures to prepare...generation assets to provide adequate electric generation service during a weather emergency according to reliability standards adopted by the Commission." The foregoing clearly establishes that the weatherization rule requires generators to prepare for some but not all extreme weather scenarios. As noted above, it is reasonable to require generators to prepare for extreme weather that fall within the design parameters set by the OEMs but requiring generators to respond to any and all extreme

weather by going beyond OEM design parameters is not practically achievable for the reason set forth. In addition, we ask the Commission to clarify that the weatherization rule requires generators to implement measures to prepare for certain extreme weather events. The weatherization rule should not create an operational requirement that would result in penalties if actual generator output during an extreme weather event falls below some specified level. Performance and operational requirements are not addressed in SB 3. It is important that any weatherization standards adopted mandate only commercially viable technology with a proven track record of performance and reliability that do not void OEM warranties, are climate appropriate for Texas, are geographically appropriate within Texas, do not substantially degrade unit performance, and do not result in extended down time for the Texas fleet. We appreciate the opportunity to participate in this project and look forward to continuing to work with the Commission and Staff as this rulemaking progresses.

Respectfully submitted,

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